

CLAIMS:

1. Removable roof for a motor vehicle, particularly a passenger car, which in use covers an opening between a windshield frame and a body frame structure of a body of the passenger car extending behind vehicle occupant seats, said roof comprising a dimensionally stable material and cooperating by means of a form-lockingly operating fixing system with the windshield frame,

wherein the fixing system of the roof comprises a first fixing device and a second fixing device, which fixing devices are arranged offset with respect to one another in a vertical direction of the vehicle by a predetermined distance and are caused to engage by movement of the roof in a driving direction.

2. Removable roof according to Claim 1, wherein the first fixing device has a flange-type forward roof extension of the roof which extends in a longitudinal direction of the vehicle and reaches under an exterior leg wall of an open U-shaped receiving device oriented toward the roof.

3. Removable roof according to Claim 2, wherein the second fixing device comprises at least one bearing journal which projects into a receiving bore.

4. Removable roof according to Claim 3, wherein the bearing journal is provided on the roof, and the receiving bore is provided on the windshield frame.

5. Removable roof according to Claim 4, wherein the receiving bore is provided in a metallic insert which is integrated in the windshield frame such that the insert is essentially surrounded by boundary walls of the windshield frame.

6. Removable roof according to Claim 4, wherein adjacent to its free end, the bearing journal has a molded-on guiding device of a largest diameter, from which the bearing journal, on the one side, merges into a shaft of a smaller diameter and, on the other side, tapers off as a conical tip.

7. Removable roof according to Claim 3, wherein the bearing journal is held in position by an elastic device.

8. Removable roof according to Claim 7, wherein the elastic device comprises two elastic bodies spaced in a transverse direction of the vehicle, said elastic bodies having a circular-cylindrical cross-section, which, on the one side, are held on a cross member of the roof and, on the other side, are connected with a plate-type holding member for the bearing journal.

9. Removable roof according to Claim 8, wherein each elastic body rests by means of a threaded pin in a threaded bore in a metallic insert of the roof.

10. Removable roof according to Claim 8, wherein the holding member is connected by means of screws with the elastic bodies.

11. Removable roof according to Claim 8, wherein the bearing journal extends in a longitudinal center plane between the elastic bodies and, is connected with the holding member by means of a threaded pin and a screw nut.

12. Removable roof according to Claim 8, wherein the elastic device with the

elastic bodies and the holding member are arranged at least largely sunk in a recess of the roof part.

13. Removable roof according to Claim 8, wherein the roof has two roof elements fitted together in a longitudinal center plane of the passenger car, at least one said bearing journal with elastic bodies being provided on each roof element, which bearing journal cooperates with the corresponding receiving bore of the windshield frame.

14. Removable roof according to Claim 3, wherein in the longitudinal view, the bearing journal of the second fixing device extends at an acute angle (α) with respect to a horizontal line.

15. Removable roof according to Claim 8, wherein in the longitudinal view, the bearing journal of the second fixing device extends at an acute angle (α) with respect to a horizontal line.

16. Removable roof according to Claim 3, wherein the bearing journal of the second fixing device and the flange-type roof extension of the first fixing device extend in the longitudinal sectional view at an acute angle (β) with respect to one another.

17. Removable roof according to Claim 2, wherein in the longitudinal sectional view, the roof extension is constructed as a step with respect to an exterior wall of the roof element, which extends flush with the exterior leg wall of the receiving device.

18. Removable roof according to Claim 17, wherein in the longitudinal sectional view, a first sealing section is provided between the exterior leg wall and the roof element, and a second sealing section is provided between an interior wall of the roof element and an interior leg wall of the receiving device.

19. Removable roof according to Claim 18, wherein the first sealing section and the second sealing section are components of a sealing body which extends by means of fitting walls along the exterior leg wall of a web wall and the interior leg wall of the receiving device.

20. Removable roof according to Claim 19, wherein the sealing body has a web extending away from the second sealing section, the second sealing section and the web forming a groove.

21. A passenger car roof assembly comprising:
a windshield frame,
a body frame structure spaced from the windshield frame with a roof opening between the windshield frame and the body frame structure,
a removable roof member operable to close at least part of the roof opening, said roof member being formed of dimensionally stable material, and
a form locking fixing assembly for form lockingly fixing a forward end of the roof member at the windshield frame,
wherein the fixing assembly includes first and second fixing devices arranged offset vertically with respect to one another when the roof member is in a roof opening closing position, said first and second fixing devices being engaged by

movement of the roof member in a vehicle driving direction toward the windshield frame.

22. A passenger car roof assembly according to Claim 21, comprising a roof member locking assembly at a rear end of the roof member for locking the roof member at the body frame structure after the roof member has been fixed by the fixing assembly at the windshield frame.

23. A passenger car roof assembly according to Claim 22, wherein the first fixing device has a flange-type forward roof extension of the roof member which extends in a longitudinal direction of the vehicle and reaches under an exterior leg wall of an open U-shaped receiving device oriented toward the roof.

24. A passenger car roof assembly according to Claim 23, wherein the second fixing device comprises at least one bearing journal which projects into a receiving bore.

25. A passenger car roof assembly according to Claim 24, wherein the bearing journal is provided on the roof member, and the receiving bore is provided on the windshield frame.

26. A passenger car roof assembly according to Claim 25, wherein the receiving bore is provided in a metallic insert which is integrated in the windshield frame such that the insert is essentially surrounded by boundary walls of the windshield frame.

27. A passenger car roof assembly according to Claim 25, wherein adjacent to its free end, the bearing journal has a molded-on guiding device of a largest diameter, from which the bearing journal, on the one side, merges into a shaft of a smaller diameter and, on the other side, tapers off as a conical tip .

28. A passenger car roof assembly according to Claim 24, wherein the bearing journal is held in position by an elastic device.

29. A passenger car roof assembly according to Claim 28, wherein the elastic device comprises two elastic bodies spaced in a transverse direction of the vehicle, said elastic bodies having a circular-cylindrical cross-section, which, on the one side, are held on a cross member of the roof member and, on the other side, are connected with a plate-type holding member for the bearing journal.

30. A passenger car roof assembly according to Claim 21, comprising two of said roof members which in use are disposed laterally adjacent and abutting each other and are operable in use to completely close the roof opening.

31. A dimensionally stable roof member for use in a passenger car assembly having a roof opening bounded by a windshield frame and a rollover bar assembly spaced from the windshield frame, said roof member including a form locking fixing assembly for form lockingly fixing a forward end of the roof member at the windshield frame,

wherein the fixing assembly includes first and second fixing devices arranged offset vertically with respect to one another when the roof member is in a roof opening closing position, said first and second fixing devices being engaged by

movement of the roof member in a vehicle driving direction toward the windshield frame.

32. A form locking fixing assembly for form lockingly fixing a forward end of a roof member to a windshield frame in a passenger car assembly having a roof opening bounded by a windshield frame and a rollover bar assembly spaced from the windshield frame,

wherein the fixing assembly includes first and second fixing devices arranged offset vertically with respect to one another when the roof member is in a roof opening closing position, said first and second fixing devices being engaged by movement of the roof member in a vehicle driving direction toward the windshield frame.